

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA

Ph. D. ENTRANCE TEST (PET) – 27th January 2019

Signature of Invigilators

Roll. No.

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(in figures as in Hall Ticket)

Textile Engineering
(19/41)

Roll No. _____

(in words)

Maximum Marks: 50

No. Of Printed Pages : 8

Instruction for the Candidate:

1. Write your Roll Number in the space provided on the top of this page.
2. This paper consists of **FIFTY (50)** multiple choice type questions. Each Question carries **ONE (1)** mark.
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below:
 - a. To have access to the Question Booklet, tear off the paper seal on the edge of this cover page, Do not accept a booklet without sticker seal and do not accept an open booklet.
 - b. Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faculty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.
 - c. After this verification is over, the Test Booklet Number should be entered on the OMR Answer Sheet and the OMR Answer Sheet Number should be entered on this Test Booklet.
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.

Example: (A) ● (C) (D) where (B) is correct response.
5. Your responses to the items are to be indicated on the OMR Answer Sheet under Paper – II only. If you mark your response at any place other than in the circle in the OMR Answer Sheet, it will not be evaluated.
6. Read instructions given inside carefully.
7. Rough Work is to be done in the end of this booklet.
8. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.
9. You have to return the original OMR Answer Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet and duplicate copy of OMR Answer Sheet on conclusion of examination
10. Use only Blue/ Black Ball point pen.
11. Use of any calculator or log table etc., is prohibited.
12. There shall be no negative marking.

Textile Engineering

(19/41)

Note: This paper contains **FIFTY (50)** multiple-choice questions. Each Question carries **ONE (1)** mark.

- 01) Spinning technique that produces core and sheath yarn is-
- A) Twist less Spinning
 - B) Dref III Spinning
 - C) Electro-static Spinning
 - D) Self twist Spinning
- 02) Index of irregularity for the best possible yarn should be
- A) 1.25
 - B) 1.15
 - C) 1.50
 - D) 1.00
- 03) Desizing of grey cotton fabric sized with starch base size is not possible with-
- A) Amylaze Enzyme
 - B) DMDHEU
 - C) Hydrogen Peroxide
 - D) Dilute HCL
- 04) System designed for preventing unthreading on doffing at Modern Ring frame is-
- A) Ri-Q-Bridge
 - B) ECOrised suction tube
 - C) Spacer
 - D) Servo grip
- 05) Fiber strength measurement principle used in Uster HVI is-
- A) CRT
 - B) CRL
 - C) CRF
 - D) CRE
- 06) FQI value for the mix having 2.5% Span Length= 28mm, Uniformity Ratio = 0.47, Fineness = 4.3 μ , Maturity Coefficient = 0.72, Stelometer strength at 3mm = 22.5 g/tex is-
- A) 49.58
 - B) 105.48
 - C) 65.05
 - D) 125.44
- 07) Higher HOK of ring spinning is attributed to –
- A) Higher standardize Production
 - B) Higher Spindle Utilization Efficiency
 - C) Lower Operative Hours per 1000 Spindle hours
 - D) Higher Excessive Operative Per Day
- 08) Ktex is the reciprocal of
- A) French count
 - B) Metric count
 - C) Silk count
 - D) Worsted count
- 09) According to SITRA norms; Combined waste value for B.R. & Card for the cotton mix having trash content of 4.5%
- A) 9.5%
 - B) 8.5%
 - C) 5.5%
 - D) 10.5%
- 10) If Ring flange width is 4.1 mm, its Ring Flange Number will be-
- A) 1.8
 - B) 1.5
 - C) 2.5
 - D) 2.0
- 11) Noil percentage in a semi combed yarn is
- A) 10 -15 %
 - B) 5 -10%
 - C) 15 - 20%
 - D) 25 - 30%
- 12) Absorption curve does Not show a rapid rise of regain at low humidity for-
- A) Silk
 - B) Nylon
 - C) Cotton
 - D) Acetate Rayon

- 13) A card with doffer diameter 60 cm fed with the lap of 428 Ktex and delivers card sliver with 4.28 Ktex fineness, if the draft between doffer and coiler calendar roll is 1.2 then total draft of card is -
- A) 100
B) 120
C) 80
D) 160
- 14) Nylon fiber is soluble at room temperature in-
- A) Metacresol
B) Formic acid
C) Sodium Hydroxide
D) Acetone
- 15) During melt spinning; melting of solid polymer and its homogenization takes place in -
- A) Quench duct
B) Spinnerate
C) Extruder
D) Manifold
- 16) Sisal is a
- A) Hair fiber
B) Fruit fiber
C) Bast fiber
D) Leaf fiber
- 17) Tester used to measure properties of false twist textured yarn in dynamic mode-
- A) Texturemate
B) Microscope
C) Dynafil
D) HCC tester
- 18) Density of Viscose rayon fiber in g/ cc is-
- A) 1.54
B) 1.24
C) 1.34
D) 2.54
- 19) Difference between Primary heater and Secondary heater temperatures for getting low bulk and high stretch false twist textured yarn should be-
- A) Low
B) Zero
C) High
D) None of the above
- 20) A cotton fabric is made for 24 ends and 18 picks per cm, warp and weft tex are 50/60, then fabric cover factor is around-
- A) 20
B) 25
C) 28
D) 23
- 21) Proportion of crystalline material present in cotton is about-
- A) $\frac{1}{2}$
B) $\frac{1}{3}$
C) $\frac{3}{4}$
D) $\frac{2}{3}$
- 22) The duty factor is the harmonic mean of-
- A) Ball toughness & Flex factor
B) Flat resistance & Ball toughness
C) Ball toughness, Flat resistance & Flex factor
D) Flat resistance & Flex factor
- 23) The value of yarn breaking length in Km (RKm) is mathematically equals to-
- A) Tenacity in gf/tex
B) Breaking load in Kg
C) Breaking load in N
D) Tenacity in gf/denier
- 24) Cotton is said to be difficult to clean with cotton factor of
- A) 5.1
B) 0.3
C) 2.5
D) 0.6

- 25) Yarn CV% is obtained on multiplying yarn U% measured on Uster Evenness tester by-
- 1.25
 - 1.50
 - 2.25
 - 1.75
- 26) Unwinding tension from ring frame bobbin is proportional to
- Winding speed
 - $(\text{winding speed})^2$
 - $\sqrt{\text{winding speed}}$
 - $\frac{1}{(\text{winding speed})^2}$
- 27) Multi-grooved drums were introduced on Muratec automatic winding machines for
- Hard waste reduction
 - Yarn hairiness reduction
 - Ribbon breaking
 - Creating better splice
- 28) At 15 places yarn fault was present out of 20 breaks caused by yarn clearer. Knot factor of yarn clearer is-
- 75 %
 - 1.33
 - 25%
 - 0.75
- 29) Thermosplicer is appropriate for -
- Wool and its blends
 - Cotton
 - Viscose
 - Jute
- 30) Automatic winding machines are provided with a feature to cut all ends at power failure-
- To improve machine efficiency
 - To save power
 - To reduce hairiness
 - None of above
- 31) *Quality guard* feature on Autoconers is provided to stop spindle when-
- Long yarn fault is detected
 - Wrong count bobbin is detected
 - Lapping on drum takes place
 - Vacuum level decreases
- 32) Consider the following assertion [a] and reason [r] and choose the correct alternative from amongst A, B, C and D:
- Sized warp has -
- [a] Higher elongation at break than unsized warp
- [r] Lower bending rigidity than unsized warp
- [a] is right and [r] is wrong
 - [a] is right and [r] is right
 - [a] is wrong and [r] is wrong
 - [a] is wrong and [r] is right
- 33) With an increase in squeeze roller pressure, size add on would
- Decrease
 - Increase
 - Decrease initially and then increase
 - Increase initially and then decrease
- 34) Viscosity of size paste is mainly influenced by
- Size concentration alone
 - Size temperature alone
 - Size concentration and temperature
 - None of these
- 35) Weft feeler most suitable for weaving delicate weft on an automatic shuttle loom is-
- Electronic weft feeler
 - Midget feeler
 - Depth feeler
 - Two prong electric weft feeler
- 36) If shuttle eye cutter of cop changing automatic loom stops working, it will create fabric fault of-
- Double pick
 - Partial pick
 - Reediness
 - Float

- 37) Which of the following are not suitable for laying multi-color wefts?
 A) Air jet loom
 B) Rapier loom
 C) Cop changing automatic loom
 D) Shuttle changing automatic loom
- 38) An insufficient bunch on pirn on a cop changing loom with side weft fork can create fabric fault of-
 A) Partial pick
 B) Double pick
 C) Periodic pick spacing variation
 D) Stop mark
- 39) Drop pins of electric warp stop motion can be differentiated from that of mechanical warp stop motion by observing-
 A) Color of drop pin
 B) Thickness of drop pin
 C) Shape of slot on upper end of drop pin
 D) None of above
- 40) During transfer of weft from projectile feeder jaw (denoted as FJ) to projectile gripper (denoted as PG) on picking side, which is the correct sequence of action?
 A) FJ opens PJ closes FJ closes
 B) PJ opens PJ closes FJ opens
 C) FJ opens PJ opens PJ closes
 D) PJ closes FJ opens PJ opens
- 41) In case of rapier looms provided with programmable weft brake system, braking force on weft during deceleration phase of rapier is generally
 A) Kept constant
 B) Decreased
 C) Increased
 D) None of above
- 42) Converging path of weft selectors towards giver rapier on modern rapier weaving machines
 A) Reduce warp breakages
 B) Increase warp breakages
 C) Helps in weft cutting
 D) Enable pick up of different wefts by giver rapier nearly at same loom timing
- 43) In air jet weaving if the difference between velocity of air stream and velocity of weft doubles, the drag force of air on weft
 A) Reduces to half
 B) Increases two times
 C) Increases four times
 D) Increases nine times
- 44) If projectile is not sensed in sensor 1 in projectile loom, electronically controlled projectile brake will
 A) Increase braking force on projectile
 B) decrease braking force on projectile
 C) Increase braking force on weft
 D) None of above
- 45) Timely arrival of projectile in receiving unit in projectile loom is sensed by
 A) Sensor 1
 B) Sensor 2
 C) Sensor 3
 D) Projectile returner
- 46) In a self stitched double cloth, back end should be preferably taken -
 A) over face pick when back end is away from face side and face pick is away from the underside of the fabric
 B) over face pick when back end is away from underside and face pick is away from the face side of the fabric
 C) over face pick when back end is away from underside and face pick is also away from the underside of the fabric
 D) over face pick when back end is away from face side and face pick is also away from the face side of the fabric
- 47) Pushing bars are found in-
 A) Positive dobby of Hattersley type
 B) Keighley dobby
 C) Rotary dobby
 D) None of these

- 48) In a single lift single cylinder jacquard, which statement is true with regard to deflection of hook caused when pressed by pattern card on cylinder?
- A) Top needles cause maximum deflection
 - B) Bottom needles cause maximum deflection
 - C) Needles nearest to griffe produce maximum deflection
 - D) All needles produce same deflection
- 49) Due to introduction of tuck stitches in weft knitting, fabric becomes
- A) Thinner and narrower
 - B) Thicker and narrower
 - C) Thicker and wider
 - D) Thinner and wider
- 50) Introduction of float stitches in a single jersey structure
- A) Reduces length of yarn delivered at feeder per cylinder rotation
 - B) increases length of yarn delivered at feeder per cylinder rotation
 - C) Does not influence length of yarn delivered at feeder per cylinder rotation
 - D) None of these

Rough Work: